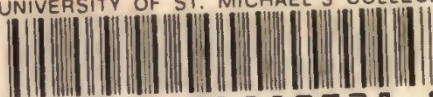
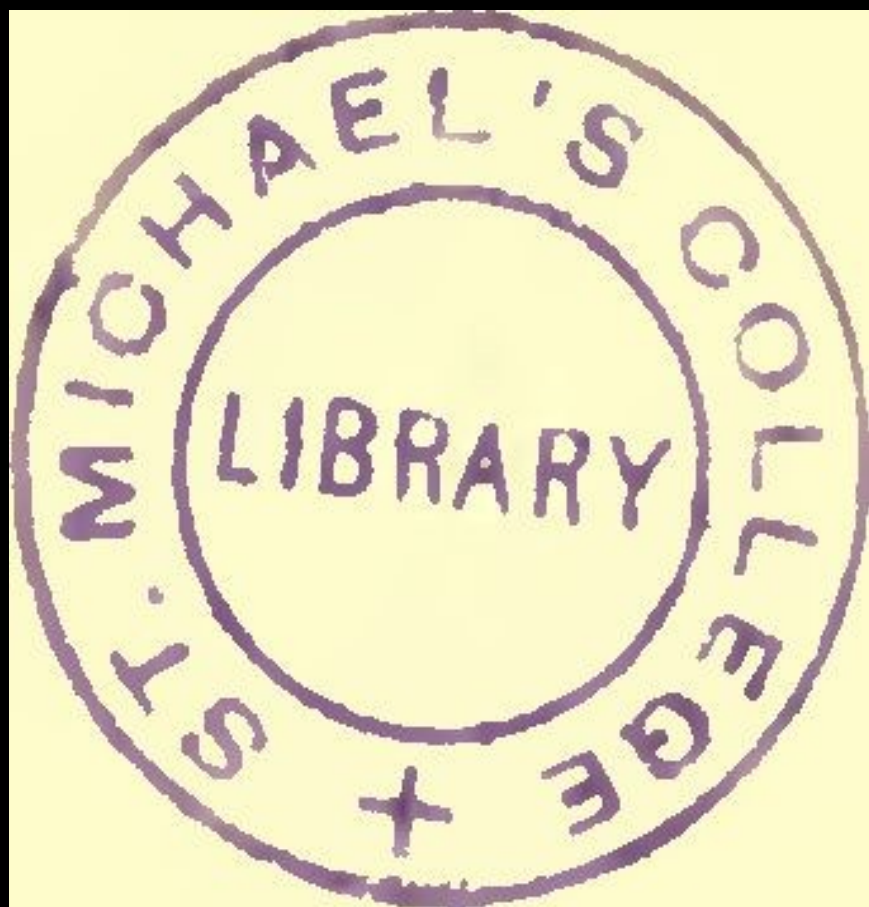


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BY
HENRI BERGSON

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Καὶ εἰ τις δε την φίσιν
τροιτο τινσ? ενεκα Trout (I
του ε'ρωτώντος ἰθελοι
eiraiiũ και λε'γειν, ἱῖποι αγ
“εχρην ptv μη ἐρωταν,
ἀλλὰ συνιεναι και αυτόν
σιωπή, ὡυπερ εγὼ σιωπω
και ονκ ἀθισμαι λε'γειν.”

PLOTINUS.



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TRANSLATOR'S PREFACE

HENRI LOUIS BERGSON was born in Paris, October 18, 1859. He entered the Ecole normale in 1878, and was admitted agrege de philosophie in 1881 and docteur es lettres in 1889. After holding professorships in various provincial and Parisian lycees, he became maitre de conferences at the Ecole normale superieure in 1897, and since 1900 has been professor at the College de France. In 1901 he became a member of the

Professor Bergson's works is the extent to which they have appealed not only to the professional philosophers, but also to the ordinary cultivated public. The method which he pursues is not the conceptual and abstract method which has been the dominant tradition in philosophy. For him reality is not to be reached by any elaborate construction of thought: it is given in immediate experience as a flux, a continuous process of becoming, to be grasped by intuition, by sympathetic insight.

Concepts break up the continuous flow of reality into parts external to one another, they further the interests of language and social life and are useful primarily for practical purposes. But they give us nothing of the life and movement of reality; rather, by substituting for this an artificial reconstruction, a patchwork of dead fragments, they lead to the difficulties which have always beset the intellectualist philosophy, and which on its premises are insoluble. Instead of

attempting a solution in the intellectualist sense, Professor Bergson calls upon his readers to put these broken fragments of reality behind them, to immerse themselves in the living stream of things and to find their difficulties swept away in its resistless flow.

In the present volume Professor Bergson first deals with the intensity of conscious states. He shows that quantitative differences are applicable only to magnitudes, that is, in the last resort, to space, and that intensity in itself is

purely qualitative. Passing then from the consideration of separate conscious states to their multiplicity, he finds that there are two forms of multiplicity: quantitative or discrete multiplicity involves the intuition of space, but the multiplicity of conscious states is wholly qualitative. This unfolding multiplicity constitutes duration, which is a succession without distinction, an interpenetration of elements so heterogeneous that former states can never recur. The idea of a

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AUTHOR'S PREFACE

WE necessarily express ourselves by means of words and we usually think in terms of space. That is to say, language requires us to establish between our ideas the same sharp and precise distinctions, the same discontinuity, as between material objects. This assimilation of thought to things is useful in practical life and necessary in most of the sciences. But it may

course, recur in the answer.

The problem which I have chosen is one which is common to metaphysics and psychology, the problem of free will. What I attempt to prove is that all discussion between the determinists and their opponents implies a previous confusion of duration with extensity, of succession with simultaneity, of quality with quantity: this confusion once dispelled, we may perhaps witness the disappearance of the objections raised against free will, of the definitions

given of it, and, in a certain sense, of the problem of free will itself. To prove this is the object of the third part of the present volume: the first two chapters, which treat of the conceptions of intensity and duration, have been written as an introduction to the third.

H. BERGSON.

February, 1888.

CONTENTS

CHAPTER 1: THE INTENSITY OF PSYCHIC STATES

Quantitative differences applicable to magnitudes but not to intensities; Attempt to estimate intensities by objective causes or atomic movements; Different kinds of intensities; Deep-seated psychic states: desire, hope, joy and sorrow ; Aesthetic feelings: grace, beauty, music, poetry, art; Moral feelings,

pity; Conscious states involving physical symptoms: muscular effort, attention and muscular tension; Violent emotions: rage, fear; Affective sensations: pleasure and pain, disgust; Representative sensations,; and external causes, sensation of sound, intensity, pitch and muscular effort, sensations of heat and cold, sensations of pressure and weight, sensation of light, photometric experiments, Delboeuf's experiments,; Psychophysics: Weber and Fechner, Delboeuf, the

psychic states invested with discontinuity of their external causes, these eliminated, real duration is felt as a quality; The two aspects of the self, on the surface well-defined conscious states, deeper down states which interpenetrate and form organic whole, solidifying influence of language on sensation, analysis distorts the feelings, deeper conscious states forming a part of ourselves; Problems soluble only by recourse to the concrete and living self.

be free, (2) prefiguring as having idea of future act to be realized by effort; does not involve determinism, determinism results from confusing these two senses; Freedom real but indefinable.

CONCLUSION

States of self-perceived through forms borrowed from external world; Intensity as quality; Duration as qualitative multiplicity; No duration in the external world; Extensity and duration must be separated; Only

the fundamental self-free; Kant's mistaken idea of time as homogeneous, hence he put the self which is free outside both space and time; Duration is heterogeneous, relation of psychic state to act is unique, and act is free.

CHAPTER 1: THE INTENSITY OF PSYCHIC STATES

It is usually admitted that states of consciousness, sensations, feelings, passions, efforts, are capable of growth and

body, we know very well what we mean. For in both cases we allude to unequal spaces, as shall be shown in detail a little further on, and we call that space the greater which contains the other. But how can a more intense sensation contain one of less intensity? Shall we say that the first implies the second, that we reach the sensation of higher intensity only on condition of having first passed through the less intense stages of the same sensation, and that in a certain sense we are concerned, here also, with

precisely in what sense one is greater than the other. The question, then, is how we succeed in forming a series of this kind with intensities, which cannot be superposed on each other, and by what sign we recognize that the members of this series increase, for example, instead of diminishing: but this always comes back to the inquiry, why an intensity can be assimilated to a magnitude.

It is only to evade the difficulty to distinguish, as is usually done, between two species of quantity, the

as a magnitude, just as if it were something extended. And not only do we use the same word, but whether we think of a greater intensity or a greater extensity, we experience in both cases an analogous impression ; the terms “greater” and “less” call up in both cases the same idea.

If we now ask ourselves in what does this idea consist, our consciousness still offers us the image of a container and a contained. We picture to ourselves, for example, a greater intensity of effort as a greater length of thread rolled up, or as a

relation between two extensities. But it is just the nature of this operation which it is difficult to determine.

The solution which occurs immediately to the mind, once it has entered upon this path, consists in defining the intensity of a sensation, or of any state whatever of the ego, by the number and magnitude of the objective, and therefore measurable, causes which have given rise to it. Doubtless, a more intense sensation of light is the one which has been obtained, or is obtainable, by means

of a larger number of luminous sources, provided they be at the same distance and identical with one another. But, in the immense majority of cases, we decide about the intensity of the effect without even knowing the nature of the cause, much less its magnitude: indeed, it is the very intensity of the effect which often leads us to venture an hypothesis as to the number and nature of the causes, and thus to revise the judgment of our senses, which at first represented them as insignificant. And it is no

use arguing that we are then comparing the actual state of the ego with some previous state in which the cause was perceived in its entirety at the same time as its effect was experienced. No doubt this is our procedure in a fairly large number of cases; but we cannot then explain the differences of intensity which we recognize between deep-seated psychic phenomena, the cause of which is within us and not outside. On the other hand, we are never so bold in judging the intensity of a psychic state

less effort in bending a steel blade than a bar of iron. Thus the comparison of two intensities is usually made without the least appreciation of the number of causes, their mode of action or their extent.

There is still room, it is true, for an hypothesis of the same nature, but more subtle. We know that mechanical, and especially kinetic, theories aim at explaining the visible and sensible properties of bodies by well-defined movements of their ultimate parts, and many of us foresee the time when

we assert the higher intensity of a particular sound? Without even going so far, could it not be laid down that every state of consciousness corresponds to a certain disturbance of the molecules and atoms of the cerebral substance, and that the intensity of a sensation measures the amplitude, the complication or the extent of these molecular movements? This last hypothesis is at least as probable as the other, but it no more solves the problem. For, quite possibly, the intensity of a

through which there resounds an indescribable note of originality. The fact is that, the further we penetrate into the depths of consciousness, the less right we have to treat psychic phenomena as things which are set side by side. When it is said that an object occupies a large space in the soul or even that it fills it entirely, we ought to understand by this simply that its image has altered the shade of a thousand perceptions or memories, and that in this sense it pervades them, although it does not itself

effort. Finally, in cases of extreme joy, our perceptions and memories become tinged with an indefinable quality, as with a kind of heat or light, so novel that now and then, as we stare at our own self, we wonder how it can really exist. Thus there are several characteristic forms of purely inward joy, all of which are successive stages corresponding to qualitative alterations in the whole of our psychic states. But the number of states which are concerned with each of these alterations is more or less

uselessness of the struggle, causes us a bitter pleasure. The aesthetic feelings offer us a still more striking example of this progressive stepping in of new elements, which can be detected in the fundamental emotion and which seem to increase its magnitude, although in reality they do nothing more than alter its nature. Let us consider the simplest of them, the feeling of grace. At first it is only the perception of a certain ease, a certain facility in the outward movements. And as those

of our thought and will. Thus a kind of physical sympathy enters into the feeling of grace. Now, in analysing the charm of this sympathy, you will find that it pleases you through its affinity with moral sympathy, the idea of which it subtly suggests. This last element, in which the others are merged after having in a measure ushered it in, explains the irresistible attractiveness of grace. We could hardly make out why it affords us such pleasure if it were nothing but a saving of effort, as Spencer

maintains. [*Essays, (Library Edition, 1891), Vol. 2, p. 381.*] But the truth is that in anything which we call very graceful we imagine ourselves able to detect, besides the lightness which is a sign of mobility, some suggestion of a possible movement towards ourselves, of a virtual and even nascent sympathy. It is this mobile sympathy, always ready to offer itself, which is just the essence of higher grace. Thus the increasing intensities of aesthetic feeling are here resolved into as many different

their emotional equivalent: but we should never realize these images so strongly without the regular movements of the rhythm by which our soul is lulled into self-forgetfulness, and, as in a dream, thinks and sees with the poet. The plastic arts obtain an effect of the same kind by the fixity which they suddenly impose upon life, and which a physical contagion carries over to the attention of the spectator. While the works of ancient sculpture express faint emotions which play upon them like a passing breath, the pale

those customary incessant changes which in ordinary life bring us back without ceasing to the consciousness of our personality: even the faint suggestion of an idea will then be enough to make the idea fill the whole of our mind. Thus art aims at impressing feelings on us rather than expressing them; it suggests them to us, and willingly dispenses with the imitation of nature when it finds some more efficacious means. Nature, like art, proceeds by suggestion, but does not command the resources of

rhythm. It supplies the deficiency by the long comradeship, based on influences received in common by nature and by ourselves, of which the effect is that the slightest indication by nature of a feeling arouses sympathy in our minds, just as a mere gesture on the part of the hypnotist is enough to force the intended suggestion upon a subject accustomed to his control. And this Sympathy is shown in particular when nature displays to us beings of *normal* proportions, so that our attention is

distributed equally over all the parts of the figure without being fixed on any one of them: our perceptive faculty then finds itself lulled and soothed by this harmony, and nothing hinders any longer the free play of sympathy, which is ever ready to come forward as soon as the obstacle in its path is removed.

It follows from this analysis that the feeling of the beautiful is no specific feeling, but that every feeling experienced by us will assume an aesthetic character, provided that it has been *suggested*, and

distinct phases in the progress of an aesthetic feeling, as in the state of hypnosis; and these phases correspond less to variations of degree than to differences of state or of nature. But the merit of a work of art is not measured so much by the power with which the suggested feeling takes hold of us as by the richness of this feeling itself: in other words, besides degrees of intensity we instinctively distinguish degrees of depth or elevation. If this last concept be analysed, it will be seen that the feelings

called them forth. Thus will be broken down the barrier interposed by time and space between his consciousness and ours: and the richer in ideas and the more pregnant with sensations and emotions is the feeling within whose limits the artist has brought us, the deeper and the higher shall we find the beauty thus expressed. The successive intensities of the aesthetic feeling thus correspond to changes of state occurring in us, and the degrees of depth to the larger or smaller number of elementary psychic

2nd ed. (1886), p. 386.]

Stretch out your arm while slightly bending your forefinger, as if you were going to press the trigger of a pistol; without moving the finger, without contracting any muscle of the hand, without producing any apparent movement, you will yet be able to feel that you are expending energy. On a closer examination, however, you will perceive that this sensation of effort coincides with the fixation of the muscles of your chest, that you keep your glottis closed and actively

contract your respiratory muscles. As soon as respiration resumes its normal course the consciousness of effort vanishes, unless you really move your finger. These facts already seemed to show that we are conscious, not of an expenditure of force, but of the movement of the muscles which results from it. The new feature in Professor James's investigation is that he has verified the hypothesis in the case of examples which seemed to contradict it absolutely. Thus when the external

rectus muscle of the right eye is paralysed, the patient tries in vain to turn his eye towards the right; yet objects seem to him to recede towards the right, and since the act of volition has produced no effect, it follows, said Helmholtz, [*Handbuch der Physiologischen Optik*, 1st ed. (1867), pp. 600-601.] that he is conscious of the effort of volition. But, replies Professor James, no account has been taken of what goes on in the other eye. This remains covered during the experiments; nevertheless it moves and

there is not much trouble in proving that it does. It is the movement of the left eye, perceived by consciousness, which produces the sensation of effort together with the impression that the objects perceived by the right eye are moving. These and similar observations lead Professor James to assert that the feeling of effort is centripetal and not centrifugal. We are not conscious of a force which we are supposed to launch upon our organism: our feeling of muscular energy at work “is a complex

afferent sensation, which comes from contracted muscles, stretched ligaments, compressed joints, an immobilized chest, a closed glottis, a knit brow, clenched jaws," in a word, from all the points of the periphery where the effort causes an alteration.

It is not for us to take a side in the dispute. After all, the question with which we have to deal is not whether the feeling of effort comes from the centre or the periphery, but in what does our perception of its intensity exactly consist?

Now, it is sufficient to observe oneself attentively to reach a conclusion on this point which Professor James has, not formulated, but which seems to us quite in accord with the spirit of his teaching. We maintain that the more a given effort seems to us to increase, the greater is the number of muscles which contract in sympathy with it, and that the apparent consciousness of a greater intensity of effort at a given point of the organism is reducible, in reality, to the perception of a larger surface of the body being affected.

head and then of all the rest of the body have taken part in the operation. You felt this gradual encroachment, this increase of the surface affected, which is in truth a change of quantity ; but, as your attention was concentrated on your closed lips, you localized the increase there and you made the psychic force there expended into a magnitude, although it possessed no extensity. Examine carefully somebody who is lifting heavier and heavier weights: the muscular contraction gradually

called violent or acute: anger, terror, and certain varieties of joy, sorrow, passion and desire. Let us show briefly that the same definition of intensity applies to these intermediate states.

Attention is not a purely physiological phenomenon, but we cannot deny that it is accompanied by movements. These movements are neither the cause nor the result of the phenomenon; they are part of it, they express it in terms of space, as Ribot has so remarkably proved. [*Le mecanisme de l'attention.*

Alcan, 1888.] Fechner had already reduced the effort of attention in a sense-organ to the muscular feeling “produced by putting in motion, by a sort of reflex action, the muscles which are correlated with the different sense organs.” He had noticed the very distinct sensation of tension and contraction of the scalp, the pressure from without inwards over the whole skull, which we experience when we make a great effort to recall something. Ribot has studied more closely the

remarkable description of the physiological symptoms of rage. "The action of the heart is much accelerated. . . . The face reddens or may turn deadly pale. The respiration is laboured, the chest heaves, and the dilated nostrils quiver. The whole body often trembles. The voice is affected. The teeth are clenched or ground together and the muscular system is commonly stimulated to violent, almost frantic action. The gestures . . . represent more or less plainly the act of striking or fighting with an enemy."

[*The Expression of the Emotions*, 1st ed., (1872), p. 74.] We shall not go so far as to maintain, with Professor James, [*"What is an Emotion?" Mind*, 1884, p. 189.] that the emotion of rage is reducible to the sum of these organic sensations : there will always be an irreducible psychic element in anger, if this be only the idea of striking or fighting, of which Darwin speaks, and which gives a common direction to so many diverse movements. But, though this idea determines the direction of the emotional state and the

not acquaint us with the nature of the latter by some definite sign? And what can this sign be except the sketching, and, as it were, the prefiguring of the future automatic movements in the very midst of the sensation which is being experienced? The affective state must then correspond not merely to the physical disturbances, movements or phenomena which have taken place, but also, and especially, to those which are in preparation, those which are getting ready to be.

sensations might thus be nothing more than our consciousness of the involuntary movements which are being begun and outlined, so to speak, within these states, and which would have gone on in their own way if nature had made us automata instead of conscious beings. If such be the case, we shall not compare a pain of increasing intensity to a note which grows louder and louder, but rather to a symphony, in which an increasing number of instruments make themselves heard. Within

the characteristic sensation, which gives the tone to all the others, consciousness distinguishes a larger or smaller number of sensations arising at different points of the periphery, muscular contractions, organic movements of every kind: the choir of these elementary psychic states voices the new demands of the organism, when confronted by a new situation. In other words, we estimate the intensity of a pain by the larger or smaller part of the

very number and extent of the parts of the body which sympathize with it and react, and whose reactions are perceived by consciousness. To convince ourselves of this, it will be enough to read the remarkable description of disgust given by the same author : “If the stimulus is slight there may be neither nausea nor vomiting. ... If the stimulus is stronger, instead of being confined to the pneumo-gastric nerve, it spreads and affects almost the whole organic system. The face turns pale, the smooth muscles of the

increasing number of sensations which join in with the sensations already experienced? Darwin has drawn a striking picture of the reactions following a pain which becomes more and more acute. "Great pain urges all animals ... to make the most violent and diversified efforts to escape from the cause of suffering. . . . With men the mouth may be closely compressed, or more commonly the lips are retracted with the teeth clenched or ground together. . . . The eyes stare wildly ... or the brows are heavily contracted.

Perspiration bathes the body. . . . The circulation and respiration are much affected.” [*The Expression of the Emotions*, 1st ed., pp. 72, 69, 70.] Now, is it not by this very contraction of the muscles affected that we measure the intensity of a pain ? Analyse your idea of any suffering which you call extreme: do you not mean that it is unbearable, that is to say, that it urges the organism to a thousand different actions in order to escape from it? I can picture to myself a nerve transmitting a pain which is independent of all

We have hardly any other means of comparing several pleasures with one another. What do we mean by a greater pleasure except a pleasure that is preferred? And what can our preference be, except a certain disposition of our organs, the effect of which is that, when two pleasures are offered simultaneously to our mind, our body inclines towards one of them? Analyse this inclination itself and you will find a great many little movements which begin and become perceptible in the organs concerned, and

the inertia of the organism, which is immersed in it and rejects every other sensation. Without this *vis inertiae* of which we become conscious by the very resistance which we offer to anything that might distract us, pleasure would be a state, but no longer a magnitude. In the moral as in the physical world, attraction serves to define movement rather than to produce it.

We have studied the affective sensations separately, but we must now notice that many representative sensations

representative, its external cause cannot exceed a certain degree of strength or weakness without inciting us to movements which enable us to measure it. Sometimes indeed we have to make an effort to perceive this sensation, as if it were trying to escape notice ; sometimes on the other hand it obsesses us, forces itself upon us and engrosses us to such an extent that we make every effort to escape from it and to remain ourselves. In the former case the sensation is said to be of slight intensity, and in the latter

states, the intensity of which is likely to possess a new meaning. For, in most cases, the organism hardly reacts at all, at least in a way that can be perceived; and yet we still make a magnitude out of the pitch of a sound, the intensity of a light, the saturation of a colour. Doubtless, a closer observation of what takes place in the whole of the organism when we hear such and such a note or perceive such and such a colour has more than one surprise in store for us. Has not C. Fere shown that every sensation is

The sensations of sound display well marked degrees of intensity. We have already spoken of the necessity of taking into account the affective character of these sensations, the shock received by the whole of the organism. We have shown that a very intense sound is one which engrosses our attention, which supplants all the others. But take away the shock, the well-marked vibration, which you sometimes feel in your head or even throughout your body : take away the clash which takes place

case of every one of us. How will the expressive or rather suggestive power of music be explained, if not by admitting that we repeat to ourselves the sounds heard, so as to carry ourselves back into the psychic state out of which they emerged, an original state, which nothing will express, but which something may suggest, viz., the very motion and attitude which the sound imparts to our body?

Thus, when we speak of the intensity of a sound of medium force as a magnitude, we allude

principally to the greater or less effort which we should have ourselves to expend in order to summon, by our own effort, the same auditory sensation. Now, besides the intensity, we distinguish another characteristic property of the sound, its pitch.

Are the differences in pitch, such as our ear perceives, quantitative differences? I grant that a sharper sound calls up the picture of a higher position in space. But does it follow from this that the notes of the scale, as auditory sensations, differ otherwise than in

quality? Forget what you have learnt from physics, examine carefully your idea of a higher or lower note, and see whether you do not think simply of the greater or less effort which the tensor muscle of your vocal chords has to make in order to produce the note? As the effort by which your voice passes from one note to another is discontinuous, you picture to yourself these successive notes as points in space, to be reached by a series of sudden jumps, in each of which you cross an empty separating interval: this is

tension of the vocal chords in the chest voice, the greater is the surface of the body affected, if the singer is inexperienced; this is just the reason why the effort is felt by him as more intense. And as he breathes out the air upwards, he will attribute the same direction to the sound produced by the current of air; hence the sympathy of a larger part of the body with the vocal muscles will be represented by a movement upwards. We shall thus say that the note is higher because the body makes an effort as though

cause: hence, we are inclined to set up similar quantitative differences among the sensations which correspond to lower intensities of the cause. But I shall not insist any further; everyone must question himself carefully on this point, after making a clean sweep of everything which his past experience has taught him about the cause of his sensations and coming face to face with the sensations themselves. The result of this examination is likely to be as follows: it will be perceived that the magnitude of a

sensations, each of which represents by its shade its place of origin and by its colour the magnitude of the weight lifted.

Shall we call the intensity of light a quantity, or shall we treat it as a quality? It has not perhaps been sufficiently noticed what a large number of different factors co-operate in daily life in giving us information about the nature of the luminous source. We know from long experience that, when we have a difficulty in distinguishing the outlines and details of objects, the light is at a distance or on

variations in brightness of a given colour—the affective sensations of which we have spoken above being left aside—would thus be nothing but qualitative changes, were it not our custom to transfer the cause to the effect and to replace our immediate impressions by what we learn from experience and science. The same thing might be said of degrees of saturation. Indeed, if the different intensities of a colour correspond to so many different shades existing between this colour and black, the

with each other, the second four times as strong as the first but twice as far off. In a word, the physicist never brings in sensations which are twice or three times as great as others, but only identical sensations, destined to serve as intermediaries between two physical quantities which can then be equated with one another. The sensation of light here plays the part of the auxiliary unknown quantity which the mathematician introduces into his calculations, and which is not intended to appear in

the final result.

But the object of the psychophysicist is entirely different: it is the sensation of light itself which he studies, and claims to measure. Sometimes he will proceed to integrate infinitely small differences, after the method of Fechner; sometimes he will compare one sensation directly with another. The latter method, due to Plateau and Delboeuf, differs far less than has hitherto been believed from Fechner's: but, as it bears more especially on the luminous sensations, we

shall deal with it first. Delboeuf places an observer in front of three concentric rings which vary in brightness. By an ingenious arrangement he can cause each of these rings to pass through all the shades intermediate between white and black. Let us suppose that two hues of grey are simultaneously produced on two of the rings and kept unchanged; let us call them A and B. Delboeuf alters the brightness, C, of the third ring, and asks the observer to tell him whether, at a certain

this will always be merely a convenient interpretation: for although the number of intermediate shades may be equal on both sides, although we may pass from one to the other by sudden leaps, we do not know whether these leaps are magnitudes, still less whether they are *equal* magnitudes: above all it would be necessary to show that the intermediaries which have helped us throughout our measurement could be found again inside the object which we have measured. If not, it is only

decrease of illumination are discontinuous, as being qualities, and because we can count approximately the principal intermediate shades which separate any two kinds of grey. The contrast A B will thus be declared equal to the contrast B C when our imagination, aided by our memory, inserts between A and B the same number of intermediate shades as between B and C. It is needless to say that this will necessarily be a very rough estimate. We may anticipate that it will vary considerably with different

persons. Above all it is to be expected that the person will show more hesitation and that the estimates of different persons will differ more widely in proportion as the difference in brightness between the rings A and B is increased, for a more and more laborious effort will be required to estimate the number of intermediate hues. This is exactly what happens, as we shall easily perceive by glancing at the two tables drawn up by Delboeuf.

relation to the original stimulus. Thus, if we denote by E the stimulus which corresponds to the sensation S , and by ΔE the amount by which the original stimulus must be increased in order that a sensation of difference may be produced, we shall have

$$\Delta E/E = \text{const.}$$

This formula has been much modified by the disciples of Fechner, and we prefer to take no part in the discussion ; it is for experiment to decide between the relation

since it is not constant, it must be a function of the original stimulus. But how are we to pass from a relation between the stimulus and its minimum increase to an equation which connects the “amount of sensation” with the corresponding stimulus? The whole of psychophysics is involved in this transition, which is therefore worthy of our closest consideration.

We shall distinguish several different artifices in the process of transition from Weber’s experiments, or from any other series of

certain relation $\Delta E = f(E)$ between the stimulus E and its minimum increase, the constancy of ΔS is expressed by writing

$$\Delta S = C\Delta E/f(E),$$

C being a constant quantity. Finally it is agreed to replace the very small differences ΔS and ΔE by the infinitely small differences dS and dE , whence an equation which is, this time, a differential one: $dS = C dE/f(E)$. We shall now simply have to integrate on both sides to obtain the desired relation :

and seeking how the sensation of heat varies when you change the temperature. In a word, it seems, on the one hand, that two different sensations cannot be said to be equal unless some identical residuum remains after the elimination of their qualitative difference; but, on the other hand, this qualitative difference being all that we perceive, it does not appear what could remain once it was eliminated.

The novel feature in Fechner's treatment is that he did not consider this

differences through which we pass before reaching it. The only remaining step will then be to utilize this twofold definition in order to establish, first of all, a relation between the differences ΔS and ΔE , and then, through the substitution of the differentials, between the two variables. True, the mathematicians may here lodge a protest against the substitution of differential for difference; the psychologists may ask, too, whether the quantity ΔS , instead of being constant, does not vary as the

you or you have recourse to a conventional mode of representation. In the first case you will find a difference between S and S' like that between the shades of the rainbow, and not at all an interval of magnitude. In the second case you may introduce the symbol ΔS if you like, but it is only in a conventional sense that you will speak here of an arithmetical difference, and in a conventional sense, also, that you will assimilate a sensation to a sum. The most acute of Fechner's critics, Jules Tannery, has

our past experience a vast number of shades of sensation which succeeded one another along with the continuous increase in the cause. We are therefore able to say that the contrast between one shade of grey and another, for example, seems to us almost equal to the contrast between the latter and a third one; and if we define two equal sensations by saying that they are sensations which a more or less confused process of reasoning interprets as such, we shall in fact reach a law like that proposed by Delboeuf. But

it must not be forgotten that consciousness has here passed through the same intermediate steps as the psychophysicist, and that its judgment is worth here just what psychophysics is worth; it is a symbolical interpretation of quality as quantity, a more or less rough estimate of the number of sensations which can come in between two given sensations. The difference is thus not as great as is believed between the method of least noticeable differences and that of mean gradations, between the psychophysics

to ask by how much it decreases or by how much it increases. And, because a measurement of this kind does not appear to be possible directly, it does not follow that science cannot successfully accomplish it by some indirect process, either by an integration of infinitely small elements, as Fechner proposes, or by any other roundabout way. Either, then, sensation is pure quality, or, if it is a magnitude, we ought to try to measure it.

To sum up what precedes, we have found the notion of

CHAPTER 2: THE MULTIPLICITY OF CONSCIOUS STATES THE IDEA OF DURATION

[I had already completed the present work when I read in the Critique philosophique (for 1883 and 1884) F. Pillon's very remarkable refutation of an interesting article by G. Noel on the interconnexion of the notions of number and space. But I have not found it necessary to make any alterations in the following pages, seeing that Pillon does not

believe that we are thinking of indivisible components: this belief has a great deal to do with the idea that it is possible to conceive number independently of space. Nevertheless, by looking more closely into the matter, we shall see that all unity is the unity of a simple act of the mind, and that, as this is an act of unification, there must be some multiplicity for it to unify. No doubt, at the moment at which I think each of these units separately, I look upon it as indivisible, since I am determined to think of its

discontinuity. In other words, as we remarked above, each of the units with which we form the number 3 seems to be indivisible while we are dealing with it, and we pass abruptly from one to the other. Again, if we form the same number with halves, with quarters, with any units whatever, these units, in so far as they serve to form the said number, will still constitute elements which are provisionally indivisible, and it is always by jerks, by sudden jumps, so to speak, that we advance from one to the

these mathematical points have a tendency to develop into lines in proportion as our attention is diverted from them, as if they were trying to reunite with one another. And when we look at number in its finished state, this union is an accomplished fact: the points have become lines, the divisions have been blotted out, the whole displays all the characteristics of continuity. This is why number, although we have formed it according to a definite law, can be split up on any system we please. In

psychic states, or even mental images other than those built up by means of sight and touch. Here, the terms being no longer given in space, it seems, *a priori*, that we can hardly count them except by some process of symbolical representation. In fact, we are well aware of a representation of this kind when we are dealing with sensations the cause of which is obviously situated in space. Thus, when we hear a noise of steps in the street, we have a confused vision of somebody walking along: each of the

and then fancy that they are counting them in pure duration. Yet we must be clear on this point. The sounds of the bell certainly reach me one after the other; but one of two alternatives must be true. Either I retain each of these successive sensations in order to combine it with the others and form a group which reminds me of an air or rhythm which I know : in that case I do not *count* the sounds, I limit myself to gathering, so to speak, the qualitative impression produced by the whole series. Or else I intend

body penetrating another: you will at once assume that there are empty spaces in the one which will be occupied by the particles of the other ; these particles in their turn cannot penetrate one another unless one of them divides in order to fill up the interstices of the other ; and our thought will prolong this operation indefinitely in preference to picturing two bodies in the same place. Now, if impenetrability were really a quality of matter which was known by the senses, it is not at all clear why we should experience more

number could not but make us doubt this analogy, to say no more. For if time, as the reflective consciousness represents it, is a medium in which our conscious states form a discrete series so as to admit of being counted, and if on the other hand our conception of number ends in spreading out in space everything which can be directly counted, it is to be presumed that time, understood in the sense of a medium in which we make distinctions and count, is nothing but space. That which goes to confirm

the absolute reality of space: perhaps we might as well ask whether space is or is not in space. In short, our senses perceive the qualities of bodies and space along with them: the great difficulty seems to have been to discover whether extensity is an aspect of these physical qualities — a quality of quality — or whether these qualities are essentially unextended, space coming in as a later addition, but being self-sufficient and existing without them. On the first hypothesis, space would be reduced to an

abstraction, or, speaking more correctly, an extract; it would express the common element possessed by certain sensations called representative. In the second case, space would be a reality as solid as the sensations themselves, although of a different order. We owe the exact formulation of this latter conception to Kant: the theory which he works out in the *Transcendental Aesthetic* consists in endowing space with an existence independent of its content, in laying down

as *de jure* separable what each of us separates *de facto*, and in refusing to regard extensity as an abstraction like the others. In this respect the Kantian conception of space differs less than is usually imagined from the popular belief. Far from shaking our faith in the reality of space, Kant has shown what it actually means and has even justified it.

Moreover, the solution given by Kant does not seem to have been seriously disputed since his time: indeed, it has forced itself, sometimes without their

knowledge, on the majority of those who have approached the problem anew, whether nativists or empiricists. Psychologists agree in assigning a Kantian origin to the nativistic explanation of Johann Muller ; but Lotze's hypothesis of local signs, Bain's theory, and the more comprehensive explanation suggested by Wundt, may seem at first sight quite independent of the Transcendental Aesthetic. The authors of these theories seem indeed to have put aside the problem of the nature of space, in

activity of the mind, and that they are obviously inclined to regard the extensive form under which we represent things as produced by a kind of alliance of the sensations with one another: space, without being extracted from the sensations, is supposed to result from their co-existence. But how can we explain such an origination without the active intervention of the mind? The extensive differs by hypothesis from the inextensive: and even if we assume that extension is nothing but a relation

of a homogeneous space grows out of an effort of the mind, there must be within the qualities themselves which differentiate two sensations some reason why they occupy this or that definite position in space. We must thus distinguish between the perception of extensity and the conception of space: they are no doubt implied in one another, but, the higher we rise in the scale of intelligent beings, the more clearly do we meet with the independent idea of a homogeneous space. It is therefore doubtful

whether animals perceive the external world quite as we do, and especially whether they represent externality in the same way as ourselves. Naturalists have pointed out, as a remarkable fact, the surprising ease with which many vertebrates, and even some insects, manage to find their way through space. Animals have been seen to return almost in a straight line to their old home, pursuing a path which was hitherto unknown to them over a distance which may amount to several

distinctions and a kind of externality of the concepts or their symbols with regard to one another, we shall find that the faculty of abstraction already implies the intuition of a homogeneous medium. What we must say is that we have to do with two different kinds of reality, the one heterogeneous, that of sensible qualities, the other homogeneous, namely space. This latter, clearly conceived by the human intellect, enables us to use clean-cut distinctions, to count, to abstract, and perhaps also

is the fundamental datum. But, misled by the apparent simplicity of the idea of time, the philosophers who have tried to reduce one of these ideas to the other have thought that they could make extensity out of duration. While showing how they have been misled, we shall see that time, conceived under the form of an unbounded and homogeneous medium, is nothing but the ghost of space haunting the reflective consciousness.

The English school tries, in fact, to reduce relations of extensity to more or less

one another, yet we perceive them in one another, and that their totality may be compared to a living being whose parts, although distinct, permeate one another just because they are so closely connected? The proof is that, if we interrupt the rhythm by dwelling longer than is right on one note of the tune, it is not its exaggerated length, as length, which will warn us of our mistake, but the qualitative change thereby caused in the whole of the musical phrase. We can thus conceive of succession

have agreed to adopt—the succession of states through which it passes cannot assume for it the form of a line ; but its sensations will add themselves dynamically to one another and will organize themselves, like the successive notes of a tune by which we allow ourselves to be lulled and soothed. In a word, pure duration might well be nothing but a succession of qualitative changes, which melt into and permeate one another, without precise outlines, without any tendency to externalize

will no longer be anything but the heterogeneous duration of the ego, without moments external to one another, without relation to number. Thus, within our ego, there is succession without mutual externality; outside the ego, in pure space, mutual externality without succession: mutual externality, since the present oscillation is radically distinct from the previous oscillation, which no longer exists; but no succession, since succession exists solely for a conscious spectator who keeps the past in mind and

juxtaposition to itself. Now, if we try to determine the exact part played by the real and the imaginary in this very complex process, this is what we find. There is a real space, without duration, in which phenomena appear and disappear simultaneously with our states of consciousness. There is a real duration, the heterogeneous moments of which permeate one another; each moment, however, can be brought into relation with a state of the external world which is contemporaneous with it,

position to the other, a process which occupies duration and which has no reality except for a conscious spectator, eludes space. We have to do here not with an *object* but with a *process*: motion, in so far as it is a passage from one point to another, is a mental synthesis, a psychic and therefore unextended process. Space contains only parts of space, and at whatever point of space we consider the moving body, we shall get only a position. If consciousness is aware of anything more than positions, the reason is that

it keeps the successive positions in mind and synthesizes them. But how does it carry out a synthesis of this kind? It cannot be by a fresh setting out of these same positions in a homogeneous medium, for a fresh synthesis would be necessary to connect the positions with one another, and so on indefinitely. We are thus compelled to admit that we have here to do with a synthesis which is, so to speak, qualitative, a gradual organization of our successive sensations, a unity resembling that of a phrase in a melody. This

each other, two tortoises which agree to make the same kind of steps or simultaneous acts, so as never to catch one another. Why does Achilles outstrip the tortoise? Because each of Achilles' steps and each of the tortoise's steps are indivisible acts in so far as they are movements, and are different magnitudes in so far as they are space: so that addition will soon give a greater length for the space traversed by Achilles than is obtained by adding together the space traversed by the tortoise and the handicap with

are objectively successive, since succession can only be thought through *comparing* the present with the past.—That the interval of duration itself cannot be taken into account by science is proved by the fact that, if all the motions of the universe took place twice or thrice as quickly, there would be nothing to alter either in our formulae or in the figures which are to be found in them. Consciousness would have an indefinable and as it were qualitative impression of the change, but the

stone always falling from the same height on to the same spot. If we mark on the path AB the points M, N, P . . . reached by the moving body at each of the moments when the stone touches the ground, and if the intervals AM, MN and NP are found to be equal to one another, the motion will be said to be uniform : and any one of these intervals will be called the velocity of the moving body, provided that it is agreed to adopt as unit of duration the physical phenomenon which has been chosen as the term of

comparison. Thus, the velocity of a uniform motion is defined by mechanics without appealing to any other notions than those of space and simultaneity. Now let us turn to the case of a variable motion, that is, to the case when the elements AM, MN, NP ... are found to be unequal. In order to define the velocity of the moving body A at the point M, we shall only have to imagine an unlimited number of moving bodies $A_1, A_2, A_3 \dots$ all moving uniformly with velocities $v_1, v_2, v_3 \dots$ which are

arranged, e.g., in an ascending scale and which correspond to all possible magnitudes. Let us then consider on the path of the moving body A two points M' and M'' , situated on either side of the point M but very near it. At the same time as this moving body reaches the points M' , M , M'' , the other moving bodies reach points $M'_1, M_1, M''_1, M'_2, M_2, M''_2 \dots$ on their respective paths ; and there must be two moving bodies A_h and A_p such that we have on the one hand $M'M = M'_h M_h$ and on the other hand $MM'' = M_p M''_p$.

Nevertheless, however small the interval is supposed to be, it is the extremity of the interval at which mathematics always places itself. As for the interval itself, as for the duration and the motion, they are necessarily left out of the equation. The reason is that duration and motion are mental syntheses, and not objects ; that, although the moving body occupies, one after the other, points on a line, motion itself has nothing to do with a line ; and finally that, although the positions occupied by the moving body vary with

difference between *same* and *other*. Sometimes this multiplicity, this distinctness, this heterogeneity contains number only potentially, as Aristotle would have said. Consciousness, then, makes a qualitative discrimination without any further thought of counting the qualities or even of distinguishing them as *several*. In such a case we have multiplicity without quantity. Sometimes, on the other hand, it is a question of a multiplicity of terms which are counted or which are conceived as

the other two, alters the nature, the appearance and, as it were, the rhythm of the whole ; without this interpenetration and this, so to speak, qualitative progress, no addition would be possible. Hence it is through the quality of quantity that we form the idea of quantity without quality.

It is therefore obvious that, if it did not betake itself to a symbolical substitute, our consciousness would never regard time as a homogeneous medium, in which the terms of a

the external world at its surface ; our successive sensations, although dissolving into one another, retain something of the mutual externality which belongs to their objective causes; and thus our superficial psychic life comes to be pictured without any great effort as set out in a homogeneous medium. But the symbolical character of such a picture becomes more striking as we advance further into the depths of consciousness: the deep-seated self which ponders and decides, which

heats and blazes up, is a self whose states and changes permeate one another and undergo a deep alteration as soon as we separate them from one another in order to set them out in space. But as this deeper self forms one and the same person with the superficial ego, the two seem to *endure* in the same way. And as the repeated picture of one identical objective phenomenon, ever recurring, cuts up our superficial psychic life into parts external to one another, the moments which are thus determined

clear and precise, but impersonal; the other confused, ever changing, and inexpressible, because language cannot get hold of it without arresting its mobility or fit it into its common-place forms without making it into public property. If we have been led to distinguish two forms of multiplicity, two forms of duration, we must expect each conscious state, taken by itself, to assume a different aspect according as we consider it within a discrete multiplicity or a confused multiplicity, in the time as

under this appearance of logic a fundamental absurdity, under this juxtaposition of simple states an infinite permeation of a thousand different impressions which have already ceased to exist the instant they are named, we commend him for having known us better than we knew ourselves. This is not the case, however, and the very fact that he spreads out our feeling in a homogeneous time, and expresses its elements by words, shows that he in his turn is only offering us its shadow : but

of them counts for nothing, relations which can therefore be classified. It may thus be said that they are associated by contiguity or for some logical reason. But if, digging below the surface of contact between the self and external objects, we penetrate into the depths of the organized and living intelligence, we shall witness the joining together or rather the blending of many ideas which, when once dissociated, seem to exclude one another as logically contradictory terms. The strangest

set side by side in a homogeneous medium, it will see difficulty after difficulty rising in its path. And these difficulties will multiply the greater the efforts it makes to overcome them, for all its efforts will only bring into clearer light the absurdity of the fundamental hypothesis by which it spreads out time in space and puts succession at the very centre of simultaneity. We shall see that the contradictions implied in the problems of causality, freedom, personality, spring from no other

source, and that, if we wish to get rid of them, we have only to go back to the real and concrete self and give up its symbolical substitute.

CHAPTER 3: THE ORGANIZATION OF CONSCIOUS STATES FREE WILL

IT is easy to see why the question of free will brings into conflict these two rival systems of nature, mechanism and dynamism. Dynamism starts from the idea of voluntary activity,

on the contrary, discovers within the particular fact a certain number of laws of which the fact is thus made to be the meeting point, and nothing else: on this hypothesis it is the law which becomes the genuine reality. Now, if it is asked why the one party assigns a higher reality to the fact and the other to the law, it will be found that mechanism and dynamism take the word *simplicity* in two very different senses. For the first, any principle is simple of which the effects can be foreseen and even calculated: thus, by

the simple and the complex, facts and laws.

A posteriori, however, definite facts are appealed to against freedom, some physical, others psychological. Sometimes it is asserted that our actions are necessitated by our feelings, our ideas, and the whole preceding series of our conscious states ; sometimes freedom is denounced as being incompatible with the fundamental properties of matter, and in particular with the principle of the conservation of energy. Hence two kinds of

phenomena, chemical action, the qualities of matter which our senses perceive, heat, sound, electricity, perhaps even attraction, are thought to be reducible objectively to these elementary movements. The matter which goes to make up organized bodies being subject to the same laws, we find in the nervous system, for example, only molecules and atoms which are in motion and attract and repel one another. Now if all bodies, organized or unorganized, thus act and react on one another in

movements which go on in the nervous system, if compounded with one another or with others, will often give as resultant a reaction of our organism on its environment: hence the reflex movements, hence also the so-called free and voluntary actions. As, moreover, the principle of the conservation of energy has been assumed to admit of no exception, there is not an atom, either in the nervous system or in the whole of the universe, whose position is not determined by the sum of the mechanical actions

even if we leave aside the atomic theory as well as any other hypothesis as to the nature of the ultimate elements of matter, the necessitating of physiological facts by their antecedents follows from the theorem of the conservation of energy, as soon as we extend this theorem to all processes going on in all living bodies. For to admit the universality of this theorem is to assume, at bottom, that the material points of which the universe is composed are subject solely to forces of attraction and

another, and then that the very universality of the principle of the conservation of energy cannot be admitted except in virtue of some psychological hypothesis.

Even if we assumed that the position, the direction and the velocity of each atom of cerebral matter are determined at every moment of time, it would not at all follow that our psychic life is subject to the same necessity. For we should first have to prove that a strictly determined psychic state corresponds to a definite cerebral state,

and the proof of this is still to be given. As a rule we do not think of demanding it, because we know that a definite vibration of the tympanum, a definite stimulation of the auditory nerve, gives a definite note on the scale, and because the parallelism of the physical and psychical series has been proved in a fairly large number of cases. But then, nobody has ever contended that we were free, under given conditions, to hear any note or perceive any colour we liked. Sensations of this kind, like many other

admitted that a motion could give rise to a perception as a cause produces an effect. Spinoza said that the modes of thought and the modes of extension correspond with but never influence one another: they only express in two different languages the same eternal truth. But the theories of physical determinism which are rife at the present day are far from displaying the same clearness, the same geometrical rigour. They point to molecular movements taking place in the brain: consciousness is

another is absolute. This is the origin of associationist determinism, an hypothesis in support of which the testimony of consciousness is appealed to, but which cannot, in the beginning, lay claim to scientific rigour. It seems natural that this, so to speak, approximate determinism, this determinism of quality, should seek support from the same mechanism that underlies the phenomena of nature : the latter would thus convey to the former its own geometrical character, and the

transaction would be to the advantage both of psychological determinism, which would emerge from it in a stricter form, and of physical mechanism, which would then spread over everything. A fortunate circumstance favours this alliance. The simplest psychic states do in fact occur as accessories to well-defined physical phenomena, and the greater number of sensations seem to be bound up with definite molecular movements. This mere beginning of an experimental proof is quite

enough for the man who, for psychological reasons, is already convinced that our conscious states are the necessary outcome of the circumstances under which they happen. Henceforth he no longer hesitates to hold that the drama enacted in the theatre of consciousness is a literal and even slavish translation of some scenes performed by the molecules and atoms of organized matter. The physical determinism which is reached in this way is nothing but psychological determinism,

nothing to distinguish our activity from absolute automatism. We are thus led to inquire whether the very extension of the principle of the conservation of energy to all the bodies in nature does not itself involve some psychological theory, and whether the scientist who did not possess *a priori* any prejudice against human freedom would think of setting up this principle as a universal law.

We must not overrate the part played by the principle of the conservation of energy in the history of the

universal conservative principle. In its present form, and since the development of the mechanical theory of heat, the principle of the conservation of energy certainly seems to apply to the whole range of physico-chemical phenomena. But no one can tell whether the study of physiological phenomena in general, and of nervous phenomena in particular, will not reveal to us, besides the *vis viva* or kinetic energy of which Leibniz spoke, and the potential energy which was

system of which the points, after moving, can return to their former positions. This return is at least conceived of as possible, and it is supposed that under these conditions nothing would be changed in the original state of the system as a whole or of its elements. In short, time cannot bite into it; and the instinctive, though vague, belief of mankind in the conservation of a fixed quantity of matter, a fixed quantity of energy, perhaps has its root in the very fact that inert matter does not seem to endure or to

conservation of energy ?

In truth, it is not a wish to meet the requirements of positive science, but rather a psychological mistake which has caused this abstract principle of mechanics to be set up as a universal law. As we are not accustomed to observe ourselves directly, but perceive ourselves through forms borrowed from the external world, we are led to believe that real duration, the duration lived by consciousness, is the same as the duration which glides over the inert atoms without penetrating and

thereby got rid of just that difference between the outer and the inner world which a close examination shows to be the main one : we have identified true duration with apparent duration. After this it would be absurd to consider time, even *our* time, as a cause of gain or loss, as a concrete reality, or a force in its own way. Thus, while we ought only to say (if we kept aloof from all presuppositions concerning free will) that the law of the conservation of energy governs physical phenomena and *may*, one

it could be asked whether the will, even when it wills for willing's sake, does not obey some decisive reason, and whether willing for willing's sake is free willing. We shall not insist on this point for the moment. It will be enough for us to have shown that, even when adopting the point of view of associationism, it is difficult to maintain that an act is absolutely determined by its motive and our conscious states by one another. Beneath these deceptive appearances a more attentive psychology sometimes reveals to us

effects which precede their causes, and phenomena of psychic attraction which elude the known laws of the association of ideas. But the time has come to ask whether the very point of view which associationism adopts does not involve a defective conception of the self and of the multiplicity of conscious states.

Associationist determinism represents the self as a collection of psychic states, the strongest of which exerts a prevailing influence and carries the others with it. This doctrine thus sharply distinguishes

In truth, these recollections have not been called up by the perfume of the rose: I breathe them in with the very scent; it means all that to me. To others it will smell differently.— It is always the same scent, you will say, but associated with different ideas.— I am quite willing that you should express yourself in this way ; but do not forget that you have first removed the personal element from the different impressions which the rose makes on each one of us ; you have retained only the objective aspect, that part of the

we fail to translate completely what our soul experiences: there is no common measure between mind and language.

Therefore, it is only an inaccurate psychology, misled by language, which will show us the soul determined by sympathy, aversion, or hate as though by so many forces pressing upon it. These feelings, provided that they go deep enough, each make up the whole soul, since the whole content of the soul is reflected in each of them. To say that the soul is determined under the

thus understood, is not *absolute*, as a radically libertarian philosophy would have it ; it admits of degrees. For it is by no means the case that all conscious states blend with one another as raindrops with the water of a lake. The self, in so far as it has to do with a homogeneous space, develops on a kind of surface, and on this surface independent growths may form and float. Thus a suggestion received in the hypnotic state is not incorporated in the mass of conscious states, but, endowed with a life of its

own, it will usurp the whole personality when its time comes. A violent anger roused by some accidental circumstance, an hereditary vice suddenly emerging from the obscure depths of the organism to the surface of consciousness, will act almost like a hypnotic suggestion. Alongside these independent elements there may be found more complex series, the terms of which do permeate one another, but which never succeed in blending perfectly with the whole mass of the self. Such is the

relations, we have everything to gain by not breaking through this crust and by assuming it to give an exact outline of the form of the object which it covers. It should now be added that our daily actions are called forth not so much by our feelings themselves, which are constantly changing, as by the unchanging images with which these feelings are bound up. In the morning, when the hour strikes at which I am accustomed to rise, I might receive this impression [GREEK] τ ψ υχῇ, as Plato

acts. It is to these acts, which are very numerous but for the most part insignificant, that the associationist theory is applicable. They are, taken all together, the substratum of our free activity, and with respect to this activity they play the same part as our organic functions in relation to the whole of our conscious life. Moreover we will grant to determinism that we often resign our freedom in more serious circumstances, and that, by sluggishness or indolence, we allow this same local process to run its course

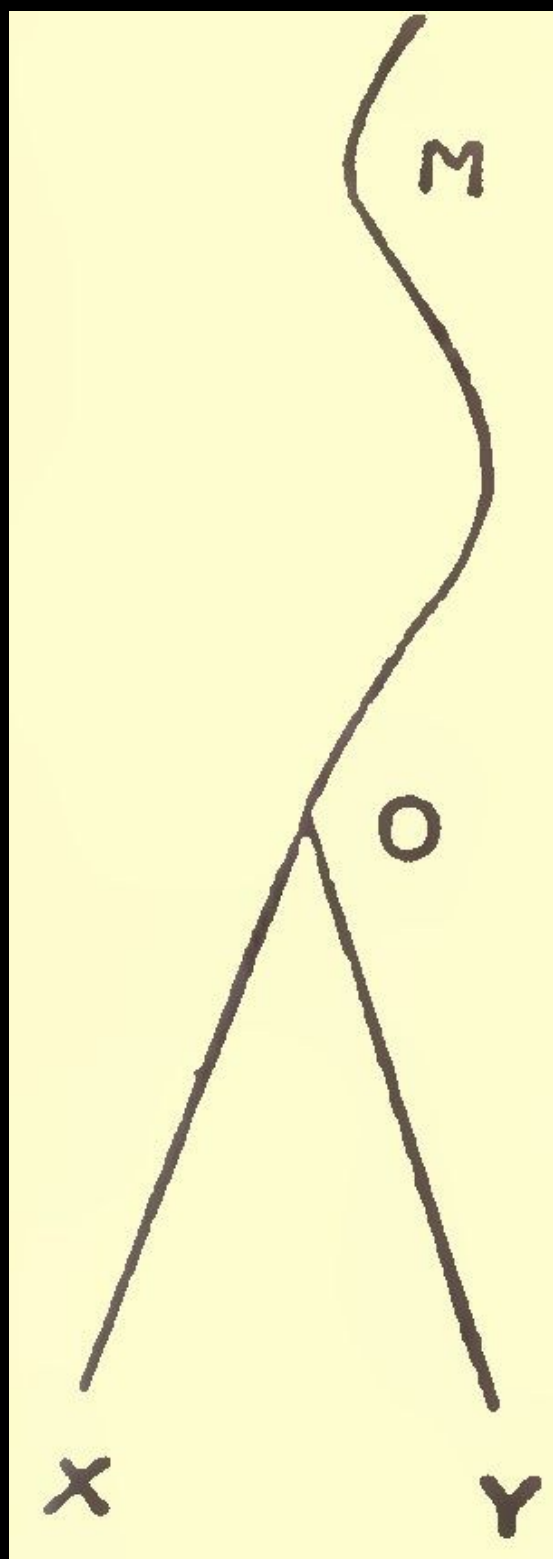
the recollection of some other decision which we might have taken. It is advisable, then, that we should place ourselves at this new point of view, and, setting aside all translation into words, all symbolism in space, attend to what pure consciousness alone shows us about an action that has come to pass or an action which is still to come. The original error of determinism and the mistake of its opponents will thus be grasped on another side, in so far as they bear explicitly on a certain misconception of

faithful to his principle, the English philosopher assigns consciousness the role of informing us about what is, not about what might be. We shall not insist for the moment on this last point: we reserve the question in what sense the ego perceives itself as a determining cause. But beside this psychological question there is another, belonging rather to metaphysics, which the determinists and their opponents solve *a priori* along opposite lines. The argument of the former implies that there is only

one possible act corresponding to given antecedents: the believers in free will assume, on the other hand, that the same series could issue in several different acts, equally possible. It is on this question of the equal possibility of two contrary actions or volitions that we shall first dwell: perhaps we shall thus gather some indication as to the nature of the operation by which the will makes its choice.

I hesitate between two possible actions X and Y, and I go in turn from one to the other. This means that I

faithful image of the concrete reality ? It must be noticed, as we said above, that the self grows, expands, and changes as it passes through the two contrary states : if not, how would it ever come to a decision ? Hence there are not exactly two contrary states, but a large number of successive and different states within which I distinguish, by an effort



marked on the map and follow it up to a certain point, there is nothing to prevent my turning back and trying to find out whether it branches off anywhere. But time is not a line along which one can pass again. Certainly, once it has elapsed, we are justified in picturing the successive moments as external to one another and in thus thinking of a line traversing space ; but it must then be understood that this line does not symbolize the time which is passing but the time which has passed. Defenders and

opponents of free will alike forget this—the former when they assert, and the latter when they deny the possibility of acting differently from what we have done. The former reason thus : “The path is not yet traced out, therefore it may take any direction whatever.” To which the answer is : “You forget that it is not possible to speak of a path till the action is performed : but then it will have been traced out.” The latter say: “The path has been traced out in such and such a way: therefore its possible

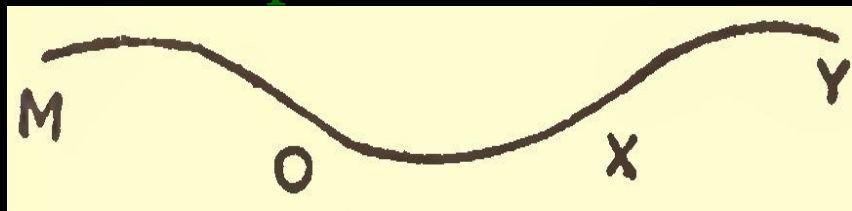
opponents reply: "The act, before being performed, was not yet performed." In other words, the question of freedom remains after this discussion exactly where it was to begin with; nor must we be surprised at it, since freedom must be nought in a certain shade or quality of the action itself and not in the relation of this act to what it is not or to what it might have been. All the difficulty arises from the fact that both parties picture the deliberation under the form of an oscillation in space, while it really

assimilating these antecedents, the one dynamic the other static. In the first case we shall be led by imperceptible steps to identify ourselves with the person we are dealing with, to pass through the same series of states, and thus to get back to the very moment at which the act is performed; hence there can no longer be any question of foreseeing it. In the second case, we presuppose the final act by the mere fact of annexing to the qualitative description of the previous states the quantitative appreciation of

their importance. Here again the one party is led merely to realize that the act is not yet performed when it is to be performed, and the other, that when performed it is performed. This, like the previous discussion, leaves the question of freedom exactly where it was to begin with. By going deeper into this twofold argument, we shall find, at its very root, the two fundamental illusions of the reflective consciousness. The first consists in regarding intensity as a mathematical property of psychic states

whilst progressing, and drawn by it in an automatic manner.

Now, in these two illusions themselves a third one is involved, and you will see that the question whether the act could or could not be foreseen always comes back to this: Is time space ?



You begin by setting side by side in some ideal space the conscious states which succeed one another in Peter's mind, and you perceive his life as a kind of

of the facts which fill it. No doubt the identification is made easier by the fact that in a large number of cases we are justified in dealing with real duration as with astronomical time. Thus, when we call to mind the past, i.e. a series of deeds done, we always shorten it, without however distorting the nature of the event which interests us. The reason is that we know it already; for the psychic state, when it reaches the end of the *progress* which constitutes its very existence, becomes a *thing* which one can picture to

The particular nature of these phenomena is thus thrust out of sight, but it is asserted that, being phenomena, they must remain subject to the law of causality. Now, it is argued, this law means that every phenomenon is determined by its conditions, or, in other words, that the same causes produce the same effects. Either, then, the act is inseparably bound to its antecedents, or the principle of causality admits of an incomprehensible exception.

This last form of the

all and will never reproduce it. And if it is now asserted that this effect was inseparably bound up with this particular cause, such an assertion will mean one of two things : either that, the antecedents being given, the future action might have been foreseen ; or that, the action having once been performed, any other action is seen, under the given conditions, to have been impossible. Now we saw that both these assertions were equally meaningless, and that they also involved a false conception of duration.

Nevertheless it will be worthwhile to dwell on this latter form of the determinist argument, even though it be only to explain from our point of view the meaning of the two words “determination” and “causality.” In vain do we argue that there cannot be any question either of foreseeing a future action in the way that an astronomical phenomenon is foreseen, or of asserting, when once an action is done, that any other action would have been impossible under the given conditions. In vain do we

We perceive physical phenomena, and these phenomena obey laws. This means: (1) that phenomena *a, b, c, d*, previously perceived, can occur again in the same shape ; (2) that a certain phenomenon *P*, which appeared after the conditions *a, b, c, d*, and after these conditions only, will not fail to recur as soon as the same conditions are again present. If the principle of causality told us nothing more, as the empiricists claim, we should willingly grant these philosophers that their principle is derived from

prefiguring can be understood in two very different ways, and it is just here that the ambiguity begins.

In the first place, mathematics furnishes us with *one* type of this kind of prefiguring. The very movement by which we draw the circumference of a circle on a sheet of paper generates all the mathematical properties of this figure: in this sense an unlimited number of theorems can be said to pre-exist within the definition, although they will be spread out in

are distinguished by quality not less than by quantity, so that there would be some difficulty in at once declaring them equivalent to one another. But, just because they are perceived through our sense-organs, we seem justified in ascribing their qualitative differences to the impression which they make on us and in assuming, behind the heterogeneity of our sensations, a homogeneous physical universe. Thus, we shall strip matter of the concrete qualities with which our senses clothe it,

colour, heat, resistance, even weight, and we shall finally find ourselves confronted with homogeneous extensity, space without body. The only step then remaining will be to describe figures in space, to make them move according to mathematically formulated laws, and to explain the apparent qualities of matter by the shape, position, and motion of these geometrical figures. Now, position is given by a system of fixed magnitudes and motion is expressed by a law, i.e. by a constant

in space there are only simultaneities, and that the business of the physicist is to provide us with the means of calculating these relations of simultaneity for any moment of our duration. Nowhere has mechanism been carried further than in this system, since the very shape of the ultimate elements of matter is here reduced to a movement. But the Cartesian physics already anticipated this interpretation; for if matter is nothing, as Descartes claimed, but homogeneous extensity, the movements

tends to vanish into algebraical smoke.

Thus understood, the relation of causality is a necessary relation in the sense that it will indefinitely approach the relation of identity, as a curve approaches its asymptote. The principle of identity is the absolute law of our consciousness: it asserts that what is thought is thought at the moment when we think it: and what gives this principle its absolute necessity is that it does not bind the future to the present, but only the present to the present: it

antecedents will always give rise to identical consequents. Descartes understood this so well that he attributed the regularity of the physical world and the continuation of the same effects to the constantly renewed grace of Providence; he built up, as it were, an instantaneous physics, intended for a universe the whole duration of which might as well be confined to the present moment. And Spinoza maintained that the indefinite series of phenomena, which takes for us the form of a

succession in time, was equivalent, in the absolute, to the divine unity: he thus assumed, on the one hand, that the relation of apparent causality between phenomena melted away into a relation of identity in the absolute, and, on the other, that the indefinite duration of things was all contained in a single moment, which is eternity. In short, whether we study Cartesian physics, Spinozistic metaphysics, or the scientific theories of our own time, we shall find everywhere the same anxiety to establish a

between successive phenomena may be supposed to arise from our perceiving, in a confused form, some mathematical mechanism behind their heterogeneity. We do not claim that common sense has any intuition of the kinetic theories of matter, still less perhaps of a Spinozistic mechanism; but it will be seen that the more the effect seems necessarily bound up with the cause, the more we tend to put it in the cause itself, as a mathematical consequence in its principle, and thus to cancel the effect of

duration. That under the influence of the same external conditions I do not behave to-day as I behaved yesterday is not at all surprising, because I *change*, because I *endure*. But things considered apart from our perception do not seem to endure; and the more thoroughly we examine this idea, the more absurd it seems to us to suppose that the same cause should not produce to-day the effect which it produced yesterday. We certainly feel, it is true, that although things do not endure as we do ourselves,

conceived under a mathematical form, thanks to a certain conception of duration which, without seeming to be so, is fairly familiar to common sense.

But there is a prefiguring of another kind, still more familiar to our mind, because immediate consciousness gives us the type of it. We go, in fact, through successive states of consciousness, and although the later was not contained in the earlier, we had before us at the time a more or less confused idea of it. The actual realization of this idea, however, did

actual *states*, somewhat analogous to those of our own self; the material universe is credited with a vague personality which is diffused through space and which, although not exactly endowed with a conscious will, is led on from one state to another by an inner impulse, a kind of effort. Such was ancient hylozoism, a half-hearted and even contradictory hypothesis, which left matter its extensity although attributing to it real conscious states, and which spread the qualities of matter throughout

Nor do the perceptions of Leibniz's monad necessitate one another; God has to regulate their order in advance. In fact, Leibniz's determinism does not spring from his conception of the monad, but from the fact that he builds up the universe with monads only. Having denied all mechanical influence of substances on one another, he had to explain how it happens that their states correspond. Hence a determinism which arises from the necessity of positing a pre-established harmony,

and not at all from the dynamic conception of the relation of causality. But let us leave history aside. Consciousness itself testifies that the abstract idea of force is that of indeterminate effort, that of an effort which has not yet issued in an act and in which the act is still only at the stage of an idea. In other words, the dynamic conception of the causal relation ascribes to things a duration absolutely like our own, whatever may be the nature of this duration ; to picture in this way the relation of cause to effect is

time, because the one is more flattering to our imagination and the other is more favourable to mathematical reasoning. Sometimes we think particularly of the regular *succession* of physical phenomena and of the kind of inner effort by which one *becomes* another; sometimes we fix our mind on the absolute *regularity* of these phenomena, and from the idea of regularity we pass by imperceptible steps to that of mathematical necessity, which excludes duration understood in the first way.

wrongly, as a free spontaneity. But, on the other hand, this idea of force, carried over into nature, travelling there side by side with the idea of necessity, has got corrupted before it returns from the journey. It returns impregnated with the idea of necessity: and in the light of the role which we have made it play in the external world, we regard force as determining with strict necessity the effects which flow from it. Here again the mistake made by consciousness arises from the fact that it looks at the

endow duration with the same attributes as extensity, to interpret a succession by a simultaneity, and to express the idea of freedom in a language into which it is obviously untranslatable.

CONCLUSION

To sum up the foregoing discussion, we shall put aside for the present Kant's terminology and also his doctrine, to which we shall return later, and we shall take the point of view of common sense. Modern

states of the ego itself, which we believe that we grasp directly, are not mostly perceived through the medium of certain forms borrowed from the external world, which thus gives us back what we have lent it. *A priori* it seems fairly probable that this is what happens. For, assuming that the forms alluded to, into which we fit matter, come entirely from the mind, it seems difficult to apply them constantly to objects without the latter soon leaving a mark on them : by then using these forms to gain a knowledge

Now just as, in order to ascertain the real relations of physical phenomena to one another, we abstract whatever obviously clashes with them in our way of perceiving and thinking, so, in order to view the self in its original purity, psychology ought to eliminate or correct certain forms which bear the obvious mark of the external world. What are these forms? When isolated from one another and regarded as so many distinct units, psychic states seem to be more or less *intense*. Next, looked at

i.e. endlessly distinct from one another. Therefore, we must give it up, too, when we study our own selves. It is through having failed to do so that associationism has made many mistakes, such as trying to reconstruct a psychic state by the addition of distinct states of consciousness, thus substituting the symbol of the ego for the ego itself.

These preliminary considerations enabled us to approach the principal object of this work, the analysis of the ideas of duration and voluntary

inexpressible reason in virtue of which we cannot examine them at successive moments of our own duration without observing that they have changed. But this change does not involve succession unless the word is taken in a new meaning: on this point we have noted the agreement of science and common sense.

Thus in consciousness we find states which succeed, without being distinguished from one another; and in space simultaneities which, without succeeding, are

distinguished from one another, in the sense that one has ceased to exist when the other appears. Outside us, mutual externality without succession; within us, succession without mutual externality.

Here again a compromise comes in. To the simultaneities, which constitute the external world, and, although distinct, succeed one another *for our consciousness*, we attribute succession *in themselves*. Hence the idea that things *endure* as we do ourselves

it undertakes the close study of external things. For we have pointed out that science retains nothing of duration but simultaneity, and nothing of motion itself but the position of the moving body, i.e. immobility. A very sharp separation is here made and space gets the best of it.

Therefore the same separation will have to be made again, but this time to the advantage of duration, when inner phenomena are studied,—not inner phenomena once developed, to be sure,

necessary separation that one party has been led to deny freedom and the other to define it, and thereby, involuntarily, to deny it too. They ask in fact whether the act could or could not be foreseen, the whole of its conditions being given; and whether they assert it or deny it, they admit that this totality of conditions could be conceived as given in advance: which amounts, as we have shown, to treating duration as a homogeneous thing and intensities as magnitudes. They will either say that the act is *determined* by its

nothing in common with juxtaposition in homogeneous space. But the moments at which we thus grasp ourselves are rare, and that is just why we are rarely free. The greater part of the time we live outside ourselves, hardly perceiving anything of ourselves but our own ghost, a colourless shadow which pure duration projects into homogeneous space. Hence our life unfolds in space rather than in time; we live for the external world rather than for ourselves; we speak rather than think; we “are

and the symbolical representation of the ego with the ego itself. He thought that consciousness was incapable of perceiving psychic states otherwise than by juxtaposition, forgetting that a medium in which these states are set side by side and distinguished from one another is of course space, and not duration. He was thereby led to believe that the same states can recur in the depths of consciousness, just as the same physical phenomena are repeated in space ; this at least is what he implicitly

get back into pure duration, of which the moments are internal and heterogeneous to one another, and in which a cause cannot repeat its effect since it will never repeat itself.

In this very confusion of true duration with its symbol both the strength and the weakness of Kantianism reside. Kant imagines on the one side “things in themselves,” and on the other a homogeneous Time and Space, through which the “things in themselves,” are refracted: thus are supposed to arise on the

one hand the phenomenal self—a self which consciousness perceives—and, on the other, external objects. Time and space on this view would not be any more in us than outside us ; the very distinction of outside and inside would be the work of time and space. This doctrine has the advantage of providing our empirical thought with a solid foundation, and of guaranteeing that phenomena, as phenomena, are adequately knowable. Indeed, we might set up these phenomena as absolute

paradoxes, it has its origin in the illusion through which we confuse succession and simultaneity, duration and extensity, quality and quantity.

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